SEQUENCE LISTING

<110> Feldmann, Kenneth
Pennell, Roger
Kwok, Shing
Dang, Van-Binh
Zhang, Hongyu

<120> NUCLEOTIDE SEQUENCES AND POLYPEPTIDES ENCODED THEREBY USEFUL FOR INCREASING PLANT SIZE AND INCREASING THE NUMBER AND SIZE OF LEAVES

<130> 2750-1573PUS1

<140> 10/572,827
<141> 2006-03-21

<150> PCT/US03/25997
<151> 2003-08-18

<160> 50

<170> PatentIn version 3.0

<210> 1
<211> 1453
<212> DNA
<213> Zea mays subsp. mays

<220>
<221> misc_feature
<222> (1)..(1453)
<223> ceres Seq. ID no. 12355477

<400> 1
aatccctcgc ctgcaactgg ctctctgtcc ccttctgctc cccccacggt tccccagagc 60

ccgagccaaa tctaggggct tccttcatcc gagcgtggtt tcaattctag gggtagtcac 120

ctcacctgaa ttccgcccaa ataaattcgt cgctgccttg tgatccttgg ggtttccttg 180

gttcttgagt tgcgatcttc tgctggttcg tgtcccccaa tccgtaatca atccggcgtc 240

taggaaacca attgctgctc agttctctta tttgctcctc gccttccttc ctccagcctg 300

gttaaaatat cgaaagggga ttttttttta aaaatctgct catcgaggaa gcagggaaga 360

caagaattgt tgcatcggat aaaggtcggg tgaaaatata agcaaatcct gggaactcgc 420

gtccctttgc taggtggttc tttcctgata caaagaacac aatgggcgat gtgtccttga 480

acggacccat taaggctgct gagccaggtg ccggtggcat tgccaagggc aatcaagttc 540

tggacacgat gtccgccggg tggacagacg agagacacag gctgtatata agctctatgg 600

aggcctcttt cgtcgatcaa ctgtacaacc acgggagccg tccgcgcaac gcaaacggca 660

ccgccttcaa ggctctccgc agggagtacg tcgagtatga gaagaccgat gctcctgtgc 720

gaaggggggc taagtgctgc ggcgttcctg caaatccttg gatgcagcat ttcaggccac 780

gtagtgatgg cggtaataac gcgcgaggcg atgggctcgg ggattctgtg ggcgatcttg 840

aatctggcac tgaggcaaac cggaagagcc tctcagcgtc tcatggaagg gaacgggacg 900

cttgtgaggg agaaccccag cttctccatg aaagtagaga ggtctctgat caaaattttg 960

ctgacgacga ggctgaagct gaaacagaat caatgaaagc atacaagaaa aggagattaa 1020

gcaggacaat gatcaactaa atttgcaggg tcaattagct tagcctgttg caggaattga 1080

gatgactgtc ctaaaaggag gcagtaagat gatgggacat gtcttacgaa attttcagct 1140

gttgcctctt ggtagccaag gcactttgaa tccgaaggaa ggtgttgaag ggtagttgtt 1200

agtgatcttg tgatgatata acgagctctg gagcagttag catcggcatt ttagtggatt 1260

atgttcttgt tatgtgtatc tgtctatttt tcagtcctca tcggtagtgc tgcatagtac 1320

ctcgctctct cgtcagaagg atattaggct aggtcactgt tattaaattt ttcaataaca 1380

gtgaagtgta catgtgtttg ccaaatggtg agaatcatta ttgatttcca attcacaaac 1440

tattctttat gcc 1453

<210> 2
<211> 576
<212> DNA
<213> Zea mays subsp. mays

<400> 2
atgggcgatg tgtccttgaa cggacccatt aaggctgctg agccaggtgc cggtggcatt 60

gccaagggca atcaagttct ggacacgatg tccgccgggt ggacagacga gagacacagg 120

ctgtatataa gctctatgga ggcctctttc gtcgatcaac tgtacaacca cgggagccgt 180

ccgcgcaacg caaacggcac cgccttcaag gctctccgca gggagtacgt cgagtatgag 240

aagaccgatg ctcctgtgcg aaggggggct aagtgctgcg gcgttcctgc aaatccttgg 300

atgcagcatt tcaggccacg tagtgatggc ggtaataacg cgcgaggcga tgggctcggg 360

gattctgtgg gcgatcttga atctggcact gaggcaaacc ggaagagcct ctcagcgtct 420

catggaaggg aacgggacgc ttgtgaggga gaaccccagc ttctccatga aagtagagag 480

gtctctgatc aaaattttgc tgacgacgag gctgaagctg aaacagaatc aatgaaagca 540

tacaagaaaa ggagattaag caggacaatg atcaac 576

<210> 3
<211> 192
<212> PRT
<213> Zea mays subsp. mays

<220>
<221> peptide
<222> (1)..(192)
<223> ceres Seq. ID no. 12355478

<400> 3

```
Met Gly Asp Val Ser Leu Asn Gly Pro Ile Lys Ala Ala Glu Pro Gly
1               5                  10                  15

Ala Gly Gly Ile Ala Lys Gly Asn Gln Val Leu Asp Thr Met Ser Ala
            20                  25                  30

Gly Trp Thr Asp Glu Arg His Arg Leu Tyr Ile Ser Ser Met Glu Ala
        35                  40                  45

Ser Phe Val Asp Gln Leu Tyr Asn His Gly Ser Arg Pro Arg Asn Ala
    50                  55                  60

Asn Gly Thr Ala Phe Lys Ala Leu Arg Arg Glu Tyr Val Glu Tyr Glu
65                  70                  75                  80

Lys Thr Asp Ala Pro Val Arg Arg Gly Ala Lys Cys Cys Gly Val Pro
                85                  90                  95

Ala Asn Pro Trp Met Gln His Phe Arg Pro Arg Ser Asp Gly Gly Asn
            100                 105                 110

Asn Ala Arg Gly Asp Gly Leu Gly Asp Ser Val Gly Asp Leu Glu Ser
        115                 120                 125

Gly Thr Glu Ala Asn Arg Lys Ser Leu Ser Ala Ser His Gly Arg Glu
    130                 135                 140

Arg Asp Ala Cys Glu Gly Glu Pro Gln Leu Leu His Glu Ser Arg Glu
145                 150                 155                 160

Val Ser Asp Gln Asn Phe Ala Asp Asp Glu Ala Glu Ala Glu Thr Glu
                165                 170                 175

Ser Met Lys Ala Tyr Lys Lys Arg Arg Leu Ser Arg Thr Met Ile Asn
            180                 185                 190
```

<210> 4
<211> 489
<212> DNA
<213> Zea mays subsp. mays

<400> 4

```
atgtccgccg ggtggacaga cgagagacac aggctgtata taagctctat ggaggcctct     60

ttcgtcgatc aactgtacaa ccacgggagc cgtccgcgca acgcaaacgg caccgccttc    120

aaggctctcc gcagggagta cgtcgagtat gagaagaccg atgctcctgt gcgaaggggg    180

gctaagtgct gcggcgttcc tgcaaatcct tggatgcagc atttcaggcc acgtagtgat    240

ggcggtaata acgcgcgagg cgatgggctc ggggattctg tgggcgatct tgaatctggc    300

actgaggcaa accggaagag cctctcagcg tctcatggaa gggaacggga cgcttgtgag    360

ggagaacccc agcttctcca tgaaagtaga gaggtctctg atcaaaattt tgctgacgac    420

gaggctgaag ctgaaacaga atcaatgaaa gcatacaaga aaaggagatt aagcaggaca    480

atgatcaac                                                            489
```

<210> 5
<211> 163
<212> PRT
<213> Zea mays subsp. mays

<220>
<221> peptide
<222> (1)..(163)
<223> ceres Seq. ID no. 12355479

<400> 5
Met Ser Ala Gly Trp Thr Asp Glu Arg His Arg Leu Tyr Ile Ser Ser
1 5 10 15

Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn His Gly Ser Arg Pro
20 25 30

Arg Asn Ala Asn Gly Thr Ala Phe Lys Ala Leu Arg Arg Glu Tyr Val
35 40 45

Glu Tyr Glu Lys Thr Asp Ala Pro Val Arg Arg Gly Ala Lys Cys Cys
50 55 60

Gly Val Pro Ala Asn Pro Trp Met Gln His Phe Arg Pro Arg Ser Asp
65 70 75 80

Gly Gly Asn Asn Ala Arg Gly Asp Gly Leu Gly Asp Ser Val Gly Asp
85 90 95

Leu Glu Ser Gly Thr Glu Ala Asn Arg Lys Ser Leu Ser Ala Ser His
100 105 110

Gly Arg Glu Arg Asp Ala Cys Glu Gly Glu Pro Gln Leu Leu His Glu
115 120 125

Ser Arg Glu Val Ser Asp Gln Asn Phe Ala Asp Asp Glu Ala Glu Ala
130 135 140

Glu Thr Glu Ser Met Lys Ala Tyr Lys Lys Arg Arg Leu Ser Arg Thr
145 150 155 160

Met Ile Asn

<210> 6
<211> 441
<212> DNA
<213> Zea mays subsp. mays

<400> 6
atggaggcct ctttcgtcga tcaactgtac aaccacggga gccgtccgcg caacgcaaac 60

ggcaccgcct tcaaggctct ccgcagggag tacgtcgagt atgagaagac cgatgctcct 120

gtgcgaaggg gggctaagtg ctgcggcgtt cctgcaaatc cttggatgca gcatttcagg 180

ccacgtagtg atggcggtaa taacgcgcga ggcgatgggc tcggggattc tgtgggcgat 240

cttgaatctg gcactgaggc aaaccggaag agcctctcag cgtctcatgg aagggaacgg 300

gacgcttgtg agggagaacc ccagcttctc catgaaagta gagaggtctc tgatcaaaat 360

tttgctgacg acgaggctga agctgaaaca gaatcaatga aagcatacaa gaaaaggaga 420

ttaagcagga caatgatcaa c 441

<210> 7
<211> 147
<212> PRT
<213> Zea mays subsp. mays

<220>
<221> peptide
<222> (1)..(147)
<223> ceres Seq. ID no. 12355480

<400> 7
Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn His Gly Ser Arg Pro
1 5 10 15

Arg Asn Ala Asn Gly Thr Ala Phe Lys Ala Leu Arg Arg Glu Tyr Val
20 25 30

Glu Tyr Glu Lys Thr Asp Ala Pro Val Arg Arg Gly Ala Lys Cys Cys
35 40 45

Gly Val Pro Ala Asn Pro Trp Met Gln His Phe Arg Pro Arg Ser Asp
50 55 60

Gly Gly Asn Asn Ala Arg Gly Asp Gly Leu Gly Asp Ser Val Gly Asp
65 70 75 80

Leu Glu Ser Gly Thr Glu Ala Asn Arg Lys Ser Leu Ser Ala Ser His
85 90 95

Gly Arg Glu Arg Asp Ala Cys Glu Gly Glu Pro Gln Leu Leu His Glu
100 105 110

Ser Arg Glu Val Ser Asp Gln Asn Phe Ala Asp Asp Glu Ala Glu Ala
115 120 125

Glu Thr Glu Ser Met Lys Ala Tyr Lys Lys Arg Arg Leu Ser Arg Thr
130 135 140

Met Ile Asn
145

<210> 8
<211> 1494
<212> DNA
<213> Zea mays subsp. mays

<220>
<221> misc_feature
<222> (1)..(1494)
<223> ceres Seq. ID no. 12410516

<400> 8
gtgtttcatt tttaatgacc attctctcat ctgctgctgg ctgcggctat atacccccct 60

ctctctgtct ctctatctcc ttctgttctt agacgtttct ccatagcctg agccaaatct 120

aggggggcttg cttcatctgc tgtccgatcg tggtttggtt tctcggggct ggcgcggtca 180

agagcgcacc tgaattccac cgaaatccgc cacggtagtt cttgcctagg tgtgtcgttg 240

gtcgttgcct tgtgaccctt gcggattttc ttgtttcttt ttgagttgcg atctttgcag 300

gttagtctcc cccccaatcc gtaatcatcc ggcgtctagg aaactgcagt ccagttttct 360

tatttgttcg tctcgtgcct tctccccatc ctggttagaa agaatatcgg aaggggggatt 420

tttttttttg cctgttcgta gaggaagcag tgaagacata attgttgcat ctgataaagc 480

tcgggcgaaa tacacgcaaa tccttggaat tttgcatccc tttgctggct cttttctgat 540

tcagagaacc caatggggga tgtgtccttg aatcgacccg ttaaggccga gccaactgcc 600

ggtggcattg ccaagggaaa ccgagttctg gacacgatgt ccgccgggtg gacggacgag 660

agacacatgc tgtatataag ctccatggag gcttcttttg tcgatcagct atacaaccat 720

ggaaaccatc cgcacgacgc aaatggcgct ggcttcaagg ttctccgcag gggggtgtgg 780

gagtacatcg agtatgagaa gaccagtgcc cctgtgcgaa gtggggctaa atgctgcgtc 840

cctgcaaatc cttggatccg gcatttcagg ccacgtgact gcggtagtaa cgcacagagt 900

gacgcggtcg aggcctcagt gggcgaccat gagtcgggta ctcaggcaag ccgcaagagc 960

ccttcagtgt ctcatggaag ggaacgggga gcttgtaagg gagaacccca gattctacat 1020

gaaagtacag aggtctctga tcaaaatttt gctgacgatg aggctgaagc tgaaacagaa 1080

tcaatgaaag catgcaagaa aaggagacta agcagggctt tgcactccgg tgctgaatga 1140

tcaagtaaat tcgcaggaac aattagctta gcctgttgca agaatcgata tgatttatcc 1200

taaaagaagg tgttaagatg atgggacatg gctttcaaaa ctttcagctg ttgcctgctg 1260

gtagccaaga cacactgaat ccgaaggaag gcgttgaagg gtagctgtta gtgattttgt 1320

gatataaaga gtactggggc agttagcatc ggcattttta gcggatttaa gttcttgtta 1380

tgtatatctg tcttctgtct tcatcagtag tgctgcttag tacctcactc tctcgtcagc 1440

aggatatttc tatatattgt ctgtacttgg tagatatatg tattggttga tccg 1494

<210> 9
<211> 585
<212> DNA
<213> Zea mays subsp. mays

<400> 9
atgggggatg tgtccttgaa tcgacccgtt aaggccgagc caactgccgg tggcattgcc 60

aagggaaacc gagttctgga cacgatgtcc gccgggtgga cggacgagag acacatgctg 120

tatataagct ccatggaggc ttcttttgtc gatcagctat acaaccatgg aaaccatccg 180

cacgacgcaa atggcgctgg cttcaaggtt ctccgcaggg gggtgtggga gtacatcgag 240

tatgagaaga ccagtgcccc tgtgcgaagt ggggctaaat gctgcgtccc tgcaaatcct 300

tggatccggc atttcaggcc acgtgactgc ggtagtaacg cacagagtga cgcggtcgag 360

gcctcagtgg gcgaccatga gtcgggtact caggcaagcc gcaagagccc ttcagtgtct 420

catggaaggg aacggggagc ttgtaaggga gaaccccaga ttctacatga aagtacagag 480

gtctctgatc aaaattttgc tgacgatgag gctgaagctg aaacagaatc aatgaaagca 540

tgcaagaaaa ggagactaag cagggctttg cactccggtg ctgaa 585

<210> 10
<211> 195
<212> PRT
<213> Zea mays subsp. mays

<220>
<221> peptide
<222> (1)..(195)
<223> ceres Seq. ID no. 12410517

<400> 10
Met Gly Asp Val Ser Leu Asn Arg Pro Val Lys Ala Glu Pro Thr Ala
1 5 10 15

Gly Gly Ile Ala Lys Gly Asn Arg Val Leu Asp Thr Met Ser Ala Gly
20 25 30

Trp Thr Asp Glu Arg His Met Leu Tyr Ile Ser Ser Met Glu Ala Ser
35 40 45

Phe Val Asp Gln Leu Tyr Asn His Gly Asn His Pro His Asp Ala Asn
50 55 60

Gly Ala Gly Phe Lys Val Leu Arg Arg Gly Val Trp Glu Tyr Ile Glu
65 70 75 80

Tyr Glu Lys Thr Ser Ala Pro Val Arg Ser Gly Ala Lys Cys Cys Val
85 90 95

Pro Ala Asn Pro Trp Ile Arg His Phe Arg Pro Arg Asp Cys Gly Ser
100 105 110

Asn Ala Gln Ser Asp Ala Val Glu Ala Ser Val Gly Asp His Glu Ser
115 120 125

Gly Thr Gln Ala Ser Arg Lys Ser Pro Ser Val Ser His Gly Arg Glu
130 135 140

Arg Gly Ala Cys Lys Gly Glu Pro Gln Ile Leu His Glu Ser Thr Glu
145 150 155 160

Val Ser Asp Gln Asn Phe Ala Asp Asp Glu Ala Glu Ala Glu Thr Glu
165 170 175

Ser Met Lys Ala Cys Lys Lys Arg Arg Leu Ser Arg Ala Leu His Ser
180 185 190

Gly Ala Glu
195

<210> 11
<211> 501
<212> DNA
<213> Zea mays subsp. mays

<400> 11
atgtccgccg ggtggacgga cgagagacac atgctgtata taagctccat ggaggcttct 60

tttgtcgatc agctatacaa ccatggaaac catccgcacg acgcaaatgg cgctggcttc 120

aaggttctcc gcagggggt gtgggagtac atcgagtatg agaagaccag tgcccctgtg 180

cgaagtgggg ctaaatgctg cgtccctgca aatccttgga tccggcattt caggccacgt 240

gactgcggta gtaacgcaca gagtgacgcg gtcgaggcct cagtgggcga ccatgagtcg 300

ggtactcagg caagccgcaa gagcccttca gtgtctcatg gaagggaacg gggagcttgt 360

aagggagaac cccagattct acatgaaagt acagaggtct ctgatcaaaa ttttgctgac 420

gatgaggctg aagctgaaac agaatcaatg aaagcatgca agaaaaggag actaagcagg 480

gctttgcact ccggtgctga a 501

<210> 12
<211> 167
<212> PRT
<213> zea mays subsp. mays

<220>
<221> peptide
<222> (1)..(167)
<223> ceres Seq. ID no. 12410518

<400> 12
Met Ser Ala Gly Trp Thr Asp Glu Arg His Met Leu Tyr Ile Ser Ser
1 5 10 15

Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn His Gly Asn His Pro
20 25 30

His Asp Ala Asn Gly Ala Gly Phe Lys Val Leu Arg Arg Gly Val Trp
35 40 45

Glu Tyr Ile Glu Tyr Glu Lys Thr Ser Ala Pro Val Arg Ser Gly Ala
50 55 60

Lys Cys Cys Val Pro Ala Asn Pro Trp Ile Arg His Phe Arg Pro Arg
65 70 75 80

Asp Cys Gly Ser Asn Ala Gln Ser Asp Ala Val Glu Ala Ser Val Gly
85 90 95

```
Asp His Glu Ser Gly Thr Gln Ala Ser Arg Lys Ser Pro Ser Val Ser
            100                 105                 110

His Gly Arg Glu Arg Gly Ala Cys Lys Gly Glu Pro Gln Ile Leu His
        115                 120                 125

Glu Ser Thr Glu Val Ser Asp Gln Asn Phe Ala Asp Asp Glu Ala Glu
    130                 135                 140

Ala Glu Thr Glu Ser Met Lys Ala Cys Lys Lys Arg Arg Leu Ser Arg
145                 150                 155                 160

Ala Leu His Ser Gly Ala Glu
                165
```

<210> 13
<211> 471
<212> DNA
<213> Zea mays subsp. mays

<400> 13
atgctgtata taagctccat ggaggcttct tttgtcgatc agctatacaa ccatggaaac 60

catccgcacg acgcaaatgg cgctggcttc aaggttctcc gcaggggggt gtgggagtac 120

atcgagtatg agaagaccag tgcccctgtg cgaagtgggg ctaaatgctg cgtccctgca 180

aatccttgga tccggcattt caggccacgt gactgcggta gtaacgcaca gagtgacgcg 240

gtcgaggcct cagtgggcga ccatgagtcg ggtactcagg caagccgcaa gagcccttca 300

gtgtctcatg gaagggaacg gggagcttgt aagggagaac cccagattct acatgaaagt 360

acagaggtct ctgatcaaaa ttttgctgac gatgaggctg aagctgaaac agaatcaatg 420

aaagcatgca agaaaaggag actaagcagg gctttgcact ccggtgctga a 471

<210> 14
<211> 157
<212> PRT
<213> Zea mays subsp. mays

<220>
<221> peptide
<222> (1)..(157)
<223> ceres Seq. ID no. 12410519

<400> 14
```
Met Leu Tyr Ile Ser Ser Met Glu Ala Ser Phe Val Asp Gln Leu Tyr
1               5                  10                  15

Asn His Gly Asn His Pro His Asp Ala Asn Gly Ala Gly Phe Lys Val
            20                  25                  30

Leu Arg Arg Gly Val Trp Glu Tyr Ile Glu Tyr Glu Lys Thr Ser Ala
        35                  40                  45

Pro Val Arg Ser Gly Ala Lys Cys Cys Val Pro Ala Asn Pro Trp Ile
    50                  55                  60
```

```
Arg His Phe Arg Pro Arg Asp Cys Gly Ser Asn Ala Gln Ser Asp Ala
65                  70                  75                  80

Val Glu Ala Ser Val Gly Asp His Glu Ser Gly Thr Gln Ala Ser Arg
                85                  90                  95

Lys Ser Pro Ser Val Ser His Gly Arg Glu Arg Gly Ala Cys Lys Gly
            100                 105                 110

Glu Pro Gln Ile Leu His Glu Ser Thr Glu Val Ser Asp Gln Asn Phe
        115                 120                 125

Ala Asp Asp Glu Ala Glu Ala Glu Thr Glu Ser Met Lys Ala Cys Lys
    130                 135                 140

Lys Arg Arg Leu Ser Arg Ala Leu His Ser Gly Ala Glu
145                 150                 155
```

<210> 15
<211> 409
<212> DNA
<213> Brassica napus

<220>
<221> misc_feature
<222> (1)..(409)
<223> ceres Seq. ID no. 4788142

<400> 15

```
ttttttcttt ttcaccttct cctcctcctt ctctcctttc ttctgatatt ttcctctctc  60

tagtcttaac aagatagata ggtagcaaat ggttggtgac tacagagaga actatagccc  120

aagctccgac gattcttctt ctgtagggga agagacgact tcttcaatgt attctgcgag  180

gaatgaagat acgcctacag aatggaccga tgagaagcat agtttgtatc ttaaatcaat  240

ggaagcttcc ttcgttgatc agctgtacaa ctccctcggt gcgctcggct ccaaaaacaa  300

caaggatact gtcggaccat cgagaaggtt cggtgatggt ggaaaacctt ctgaagaaca  360

ggtatgaata ggacactttc ccctgtcttt ttccatgtgc gatgttgtg               409
```

<210> 16
<211> 276
<212> DNA
<213> Brassica napus

<400> 16

```
atggttggtg actacagaga gaactatagc ccaagctccg acgattcttc ttctgtaggg     60

gaagagacga cttcttcaat gtattctgcg aggaatgaag atacgcctac agaatggacc    120

gatgagaagc atagtttgta tcttaaatca atggaagctt ccttcgttga tcagctgtac    180

aactccctcg gtgcgctcgg ctccaaaaac aacaaggata ctgtcggacc atcgagaagg    240

ttcggtgatg gtggaaaacc ttctgaagaa caggta                              276
```

<210> 17
<211> 92
<212> PRT
<213> Brassica napus

<220>
<221> peptide
<222> (1)..(92)
<223> ceres Seq. ID no. 4788143

<400> 17
Met Val Gly Asp Tyr Arg Glu Asn Tyr Ser Pro Ser Ser Asp Asp Ser
1 5 10 15

Ser Ser Val Gly Glu Glu Thr Thr Ser Ser Met Tyr Ser Ala Arg Asn
20 25 30

Glu Asp Thr Pro Thr Glu Trp Thr Asp Glu Lys His Ser Leu Tyr Leu
35 40 45

Lys Ser Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn Ser Leu Gly
50 55 60

Ala Leu Gly Ser Lys Asn Asn Lys Asp Thr Val Gly Pro Ser Arg Arg
65 70 75 80

Phe Gly Asp Gly Gly Lys Pro Ser Glu Glu Gln Val
85 90

<210> 18
<211> 198
<212> DNA
<213> Brassica napus

<400> 18
atgtattctg cgaggaatga agatacgcct acagaatgga ccgatgagaa gcatagtttg 60

tatcttaaat caatggaagc ttccttcgtt gatcagctgt acaactccct cggtgcgctc 120

ggctccaaaa acaacaagga tactgtcgga ccatcgagaa ggttcggtga tggtggaaaa 180

ccttctgaag aacaggta 198

<210> 19
<211> 66
<212> PRT
<213> Brassica napus

<220>
<221> peptide
<222> (1)..(66)
<223> ceres Seq. ID no. 4788144

<400> 19
Met Tyr Ser Ala Arg Asn Glu Asp Thr Pro Thr Glu Trp Thr Asp Glu
1 5 10 15

Lys His Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe Val Asp Gln
1 5 10 15

Leu Tyr Asn Ser Leu Gly Ala Leu Gly Ser Lys Asn Asn Lys Asp Thr
20 25 30

Val Gly Pro Ser Arg Arg Phe Gly Asp Gly Gly Lys Pro Ser Glu Glu
35 40 45

Gln Val
50 55 60

65

<210> 20
<211> 186
<212> DNA
<213> Brassica napus

<400> 20
atgaagatac gcctacagaa tggaccgatg agaagcatag tttgtatctt aaatcaatgg 60

aagcttcctt cgttgatcag ctgtacaact ccctcggtgc gctcggctcc aaaaacaaca 120

aggatactgt cggaccatcg agaaggttcg gtgatggtgg aaaaccttct gaagaacagg 180

tatgaa 186

<210> 21
<211> 62
<212> PRT
<213> Brassica napus

<220>
<221> peptide
<222> (1)..(62)
<223> ceres Seq. ID no. 4788145

<400> 21
Met Lys Ile Arg Leu Gln Asn Gly Pro Met Arg Ser Ile Val Cys Ile
1 5 10 15

Leu Asn Gln Trp Lys Leu Pro Ser Leu Ile Ser Cys Thr Thr Pro Ser
20 25 30

Val Arg Ser Ala Pro Lys Thr Thr Arg Ile Leu Ser Asp His Arg Glu
35 40 45

Gly Ser Val Met Val Glu Asn Leu Leu Lys Asn Arg Tyr Glu
50 55 60

<210> 22
<211> 486
<212> DNA
<213> Brassica napus

<220>
<221> misc_feature
<222> (1)..(486)

<223> ceres Seq. ID no. 4796909

<400> 22
tttccgtctt tctttttcac cttctcctcc tccttctctc ctttcttctg atattttcct 60

ctctctagtc ttaacaagat agataggtag caaatggttg gtgactacag agagaactat 120

agcccaagct ccgacgattc ttcttctgta ggggaagaga cgacttcttc aatgtattct 180

gcgaggaatg aagatacgcc tacagaatgg accgatgaga agcatagttt gtatcttaaa 240

tcaatggaag cttccttcgt tgatcagctg tacaactccc tcggtgcgct cggctccaaa 300

aacaacaagg atactgtcgg accatcgaga aggttcggtg atggtggaaa accttctgaa 360

gaacagaaga tgaatgtgag gcagcctgag tatcgtctca atggaagaca cggtcgtcgc 420

tctcacgagt ttcttaggag tccatggatc aagcactata agccttcacc aaagtcccta 480

acagat 486

<210> 23
<211> 393
<212> DNA
<213> Brassica napus

<400> 23
atggttggtg actacagaga gaactatagc ccaagctccg acgattcttc ttctgtaggg 60

gaagagacga cttcttcaat gtattctgcg aggaatgaag atacgcctac agaatggacc 120

gatgagaagc atagtttgta tcttaaatca atggaagctt ccttcgttga tcagctgtac 180

aactccctcg gtgcgctcgg ctccaaaaac aacaaggata ctgtcggacc atcgagaagg 240

ttcggtgatg gtggaaaacc ttctgaagaa cagaagatga atgtgaggca gcctgagtat 300

cgtctcaatg gaagacacgg tcgtcgctct cacgagtttc ttaggagtcc atggatcaag 360

cactataagc cttcaccaaa gtccctaaca gat 393

<210> 24
<211> 131
<212> PRT
<213> Brassica napus

<220>
<221> peptide
<222> (1)..(131)
<223> ceres Seq. ID no. 4796910

<400> 24
Met Val Gly Asp Tyr Arg Glu Asn Tyr Ser Pro Ser Ser Asp Asp Ser
1 5 10 15

Ser Ser Val Gly Glu Glu Thr Thr Ser Ser Met Tyr Ser Ala Arg Asn
20 25 30

```
Glu Asp Thr Pro Thr Glu Trp Thr Asp Glu Lys His Ser Leu Tyr Leu
        35                  40                  45

Lys Ser Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn Ser Leu Gly
    50                  55                  60

Ala Leu Gly Ser Lys Asn Asn Lys Asp Thr Val Gly Pro Ser Arg Arg
65                  70                  75                  80

Phe Gly Asp Gly Gly Lys Pro Ser Glu Glu Gln Lys Met Asn Val Arg
                85                  90                  95

Gln Pro Glu Tyr Arg Leu Asn Gly Arg His Gly Arg Arg Ser His Glu
            100                 105                 110

Phe Leu Arg Ser Pro Trp Ile Lys His Tyr Lys Pro Ser Pro Lys Ser
        115                 120                 125

Leu Thr Asp
    130
```

<210> 25
<211> 315
<212> DNA
<213> Brassica napus

<400> 25

```
atgtattctg cgaggaatga agatacgcct acagaatgga ccgatgagaa gcatagtttg     60

tatcttaaat caatggaagc ttccttcgtt gatcagctgt acaactccct cggtgcgctc    120

ggctccaaaa acaacaagga tactgtcgga ccatcgagaa ggttcggtga tggtggaaaa    180

ccttctgaag aacagaagat gaatgtgagg cagcctgagt atcgtctcaa tggaagacac    240

ggtcgtcgct ctcacgagtt tcttaggagt ccatggatca agcactataa gccttcacca    300

aagtccctaa cagat                                                     315
```

<210> 26
<211> 105
<212> PRT
<213> Brassica napus

<220>
<221> peptide
<222> (1)..(105)
<223> ceres Seq. ID no. 4796911

<400> 26

```
Met Tyr Ser Ala Arg Asn Glu Asp Thr Pro Thr Glu Trp Thr Asp Glu
1               5                   10                  15

Lys His Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe Val Asp Gln
            20                  25                  30

Leu Tyr Asn Ser Leu Gly Ala Leu Gly Ser Lys Asn Asn Lys Asp Thr
        35                  40                  45

Val Gly Pro Ser Arg Arg Phe Gly Asp Gly Gly Lys Pro Ser Glu Glu
```

50 55 60

Gln Lys Met Asn Val Arg Gln Pro Glu Tyr Arg Leu Asn Gly Arg His
65 70 75 80

Gly Arg Arg Ser His Glu Phe Leu Arg Ser Pro Trp Ile Lys His Tyr
85 90 95

Lys Pro Ser Pro Lys Ser Leu Thr Asp
100 105

<210> 27
<211> 243
<212> DNA
<213> Brassica napus

<400> 27
atggaagctt ccttcgttga tcagctgtac aactccctcg gtgcgctcgg ctccaaaaac 60

aacaaggata ctgtcggacc atcgagaagg ttcggtgatg gtggaaaacc ttctgaagaa 120

cagaagatga atgtgaggca gcctgagtat cgtctcaatg gaagacacgg tcgtcgctct 180

cacgagtttc ttaggagtcc atggatcaag cactataagc cttcaccaaa gtccctaaca 240

gat 243

<210> 28
<211> 81
<212> PRT
<213> Brassica napus

<220>
<221> peptide
<222> (1)..(81)
<223> ceres Seq. ID no. 4796912

<400> 28
Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn Ser Leu Gly Ala Leu
1 5 10 15

Gly Ser Lys Asn Asn Lys Asp Thr Val Gly Pro Ser Arg Arg Phe Gly
20 25 30

Asp Gly Gly Lys Pro Ser Glu Glu Gln Lys Met Asn Val Arg Gln Pro
35 40 45

Glu Tyr Arg Leu Asn Gly Arg His Gly Arg Arg Ser His Glu Phe Leu
50 55 60

Arg Ser Pro Trp Ile Lys His Tyr Lys Pro Ser Pro Lys Ser Leu Thr
65 70 75 80

Asp

<210> 29
<211> 1014
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> misc_feature
<222> (1)..(1014)
<223> ceres Seq. ID no. 12321174

<400> 29
ctctctctct taaagctctc ttctttggct ctttcgaaga agaaccattt ttatttccta 60

agagagacga cggagttctt ttctaaagca ccggagagga ggagaagcaa cgatggagaa 120

tgattgcacg gtgaatattg tctctctgga gaaggatcgc gatgtttcgg aggcgtcggc 180

tgaatctcag agcgagtcga ctctttcgaa ctcgctcgat tccggtgtta cggctgagac 240

ctctcgttct gatgctgatt ccaaactgga tgaatgtact gcttggacga atgagaaaca 300

caactcatat cttgattatt tagagagctc gtttgttagg caattatact ccttgcttgg 360

aggtgggact cagagacttt ctagaactcg tgatgtgcag tctaactctc ataaatcagc 420

tgatcagttt accgtcctac aaaatggttg ctggcagaag gttaactttg gaaagaaaca 480

atcttgtttg gagacttcat ctgagtttcg ttttcacaga aattcattga gaaataagcc 540

tgaaaattcc aacggaaatt acaccatggg aactactgtc caaggagatg tgttatgtca 600

tgacgaaacc aaacactcag aggcgtcagg gcagaatttc agagaagaag aagaagaaga 660

agagaaggga gaggtgagca aaaaacgaga aagagaagca aataacgatg atagttcatt 720

gaaggaggat caggttgtgc cggtaaggat ggtgaagccc agaacgtgaa agcattagga 780

agtgtagatg aaatactatg aatagagata aagaaatага agaaggtgtg gttacgaatg 840

tggagagggt tttgtttgtt gtatagcgtg aggctaaaga gagccttcct tataaaggga 900

tccaatggga tatggaaata ggattggtgt ttgttttcgt taaattttgt ctaatgttaa 960

ctaggggaaa agttatctga tagtattagc atcttatggc aattttattc tttt 1014

<210> 30
<211> 654
<212> DNA
<213> Arabidopsis thaliana

<400> 30
atggagaatg attgcacggt gaatattgtc tctctggaga aggatcgcga tgtttcggag 60

gcgtcggctg aatctcagag cgagtcgact ctttcgaact cgctcgattc cggtgttacg 120

gctgagacct ctcgttctga tgctgattcc aaactggatg aatgtactgc ttggacgaat 180

gagaaacaca actcatatct tgattattta gagagctcgt ttgttaggca attatactcc 240

ttgcttggag gtgggactca gagactttct agaactcgtg atgtgcagtc taactctcat 300

aaatcagctg atcagtttac cgtcctacaa aatggttgct ggcagaaggt taactttgga 360

aagaaacaat cttgtttgga gacttcatct gagtttcgtt ttcacagaaa ttcattgaga 420

aataagcctg aaaattccaa cggaaattac accatgggaa ctactgtcca aggagatgtg 480

ttatgtcatg acgaaaccaa acactcagag gcgtcagggc agaatttcag agaagaagaa 540

gaagaagaag agaagggaga ggtgagcaaa aaacgagaaa gagaagcaaa taacgatgat 600

agttcattga aggaggatca ggttgtgccg gtaaggatgg tgaagcccag aacg 654

<210> 31
<211> 218
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(218)
<223> ceres Seq. ID no. 12321175

<400> 31
Met Glu Asn Asp Cys Thr Val Asn Ile Val Ser Leu Glu Lys Asp Arg
1 5 10 15

Asp Val Ser Glu Ala Ser Ala Glu Ser Gln Ser Glu Ser Thr Leu Ser
20 25 30

Asn Ser Leu Asp Ser Gly Val Thr Ala Glu Thr Ser Arg Ser Asp Ala
35 40 45

Asp Ser Lys Leu Asp Glu Cys Thr Ala Trp Thr Asn Glu Lys His Asn
50 55 60

Ser Tyr Leu Asp Tyr Leu Glu Ser Ser Phe Val Arg Gln Leu Tyr Ser
65 70 75 80

Leu Leu Gly Gly Gly Thr Gln Arg Leu Ser Arg Thr Arg Asp Val Gln
85 90 95

Ser Asn Ser His Lys Ser Ala Asp Gln Phe Thr Val Leu Gln Asn Gly
100 105 110

Cys Trp Gln Lys Val Asn Phe Gly Lys Lys Gln Ser Cys Leu Glu Thr
115 120 125

Ser Ser Glu Phe Arg Phe His Arg Asn Ser Leu Arg Asn Lys Pro Glu
130 135 140

Asn Ser Asn Gly Asn Tyr Thr Met Gly Thr Thr Val Gln Gly Asp Val
145 150 155 160

Leu Cys His Asp Glu Thr Lys His Ser Glu Ala Ser Gly Gln Asn Phe
165 170 175

Arg Glu Glu Glu Glu Glu Glu Glu Lys Gly Glu Val Ser Lys Lys Arg
180 185 190

Glu Arg Glu Ala Asn Asn Asp Asp Ser Ser Leu Lys Glu Asp Gln Val

195 200 205

Val Pro Val Arg Met Val Lys Pro Arg Thr
210 215

<210> 32
<211> 1027
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> misc_feature
<222> (1)..(1027)
<223> ceres Seq. ID no. 12323601

<400> 32
agatattttg tttctctctt tctctctgat atttttcatt ttcttcttct tctctctctc 60

tctccacaaa gataagccaa caatggttgg tgattacaga ggacgcttta gtagccgtcg 120

tttctccgac gactctgacg attcttccga cgatgcttct tccgtggagg gagagaccac 180

ttcttccatg tactctgcgg ggaaagagta tatggaaaca gaatggacta atgagaagca 240

tagtttatat cttaaatcta tggaagcttc attcgtagat cagttatata actcgctcgg 300

agctctcggg aagaacgaga atgtatccga atcaacgagg ttcggtagcg gtagaaaacc 360

gtctcaagaa cagttcaagg ttcttcatga tggtttctgg cagaagatta atgtgaaaca 420

acctgaacat cggattaacg gaaggcacgg tggtaattct catgagtttc ttaggagtcc 480

atggattaag cattataaac ctttagtaaa gacacaaatc ccggtaacgg atgagcccga 540

aaatcaagtt gttagcagct ctaatgggaa gaagggaata tgcagctctg gctcagcctc 600

tagtctcaag cagctaagct ctcattcgcg tgaccacgac caaatcagcg ttggagaagc 660

agaggtatcg gatcagaact ttgttaacga aggaataaaa ggcgaaaacg gaagctcgaa 720

gaagatgaag acggtgatga tgagtgaatc gtcgagtacc gatcaggttg ttccactcaa 780

taagctcttg caacatgacg taaatttgaa gtctgtttct tgagaggtca gatggtgaag 840

ctttatatga ggagagaatt ttgtaatgta tatatatttg cataacttat aagtcaaatt 900

tactatcctt agttacaagt ttcttcatca tatatcccta actataaata tatttatatg 960

ctcatgtgag tggattcatt tgtactgtaa aacccttaga aagacgtcaa attagtattt 1020

gatggtc 1027

<210> 33
<211> 819
<212> DNA
<213> Arabidopsis thaliana

<400> 33
gatattttgt ttctctcttt ctctctgata tttttcattt tcttcttctt ctctctctct 60

ctccacaaag ataagccaac aatggttggt gattacagag gacgctttag tagccgtcgt 120

ttctccgacg actctgacga ttcttccgac gatgcttctt ccgtggaggg agagaccact 180

tcttccatgt actctgcggg gaaagagtat atggaaacag aatggactaa tgagaagcat 240

agtttatatc ttaaatctat ggaagcttca ttcgtagatc agttatataa ctcgctcgga 300

gctctcggga agaacgagaa tgtatccgaa tcaacgaggt tcggtagcgg tagaaaaccg 360

tctcaagaac agttcaaggt tcttcatgat ggtttctggc agaagattaa tgtgaaacaa 420

cctgaacatc ggattaacgg aaggcacggt ggtaattctc atgagtttct taggagtcca 480

tggattaagc attataaacc tttagtaaag acacaaatcc cggtaacgga tgagcccgaa 540

aatcaagttg ttagcagctc taatgggaag aagggaatat gcagctctgg ctcagcctct 600

agtctcaagc agctaagctc tcattcgcgt gaccacgacc aaatcagcgt tggagaagca 660

gaggtatcgg atcagaactt tgttaacgaa ggaataaaag gcgaaaacgg aagctcgaag 720

aagatgaaga cggtgatgat gagtgaatcg tcgagtaccg atcaggttgt tccactcaat 780

aagctcttgc aacatgacgt aaatttgaag tctgtttct 819

<210> 34
<211> 273
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(273)
<223> ceres Seq. ID no. 12323602

<400> 34

```
Asp Ile Leu Phe Leu Ser Phe Ser Leu Ile Phe Phe Ile Phe Phe Phe
1               5                  10                  15

Phe Ser Leu Ser Leu His Lys Asp Lys Pro Thr Met Val Gly Asp Tyr
            20                  25                  30

Arg Gly Arg Phe Ser Ser Arg Arg Phe Ser Asp Asp Ser Asp Asp Ser
        35                  40                  45

Ser Asp Asp Ala Ser Ser Val Glu Gly Glu Thr Thr Ser Ser Met Tyr
    50                  55                  60

Ser Ala Gly Lys Glu Tyr Met Glu Thr Glu Trp Thr Asn Glu Lys His
65                  70                  75                  80

Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe Val Asp Gln Leu Tyr
                85                  90                  95

Asn Ser Leu Gly Ala Leu Gly Lys Asn Glu Asn Val Ser Glu Ser Thr
            100                 105                 110

Arg Phe Gly Ser Gly Arg Lys Pro Ser Gln Glu Gln Phe Lys Val Leu
        115                 120                 125

His Asp Gly Phe Trp Gln Lys Ile Asn Val Lys Gln Pro Glu His Arg
```

```
    130                 135                 140

Ile Asn Gly Arg His Gly Gly Asn Ser His Glu Phe Leu Arg Ser Pro
145                 150                 155                 160

Trp Ile Lys His Tyr Lys Pro Leu Val Lys Thr Gln Ile Pro Val Thr
                165                 170                 175

Asp Glu Pro Glu Asn Gln Val Val Ser Ser Ser Asn Gly Lys Lys Gly
            180                 185                 190

Ile Cys Ser Ser Gly Ser Ala Ser Ser Leu Lys Gln Leu Ser Ser His
        195                 200                 205

Ser Arg Asp His Asp Gln Ile Ser Val Gly Glu Ala Glu Val Ser Asp
    210                 215                 220

Gln Asn Phe Val Asn Glu Gly Ile Lys Gly Glu Asn Gly Ser Ser Lys
225                 230                 235                 240

Lys Met Lys Thr Val Met Met Ser Glu Ser Ser Ser Thr Asp Gln Val
                245                 250                 255

Val Pro Leu Asn Lys Leu Leu Gln His Asp Val Asn Leu Lys Ser Val
            260                 265                 270

Ser
```

<210> 35
<211> 738
<212> DNA
<213> Arabidopsis thaliana

<400> 35

```
atggttggtg attacagagg acgctttagt agccgtcgtt tctccgacga ctctgacgat     60

tcttccgacg atgcttcttc cgtggaggga gagaccactt cttccatgta ctctgcgggg    120

aaagagtata tggaaacaga atggactaat gagaagcata gtttatatct taaatctatg    180

gaagcttcat tcgtagatca gttatataac tcgctcggag ctctcgggaa gaacgagaat    240

gtatccgaat caacgaggtt cggtagcggt agaaaaccgt ctcaagaaca gttcaaggtt    300

cttcatgatg gtttctggca gaagattaat gtgaaacaac ctgaacatcg gattaacgga    360

aggcacggtg gtaattctca tgagtttctt aggagtccat ggattaagca ttataaacct    420

ttagtaaaga cacaaatccc ggtaacggat gagcccgaaa atcaagttgt tagcagctct    480

aatgggaaga agggaatatg cagctctggc tcagcctcta gtctcaagca gctaagctct    540

cattcgcgtg accacgacca aatcagcgtt ggagaagcag aggtatcgga tcagaacttt    600

gttaacgaag gaataaaagg cgaaaacgga agctcgaaga agatgaagac ggtgatgatg    660

agtgaatcgt cgagtaccga tcaggttgtt ccactcaata agctcttgca acatgacgta    720

aatttgaagt ctgtttct                                                  738
```

<210> 36
<211> 246
<212> PRT

<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(246)
<223> ceres Seq. ID no. 12323603

<400> 36
Met Val Gly Asp Tyr Arg Gly Arg Phe Ser Ser Arg Arg Phe Ser Asp
1 5 10 15

Asp Ser Asp Asp Ser Ser Asp Asp Ala Ser Ser Val Glu Gly Glu Thr
20 25 30

Thr Ser Ser Met Tyr Ser Ala Gly Lys Glu Tyr Met Glu Thr Glu Trp
35 40 45

Thr Asn Glu Lys His Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe
50 55 60

Val Asp Gln Leu Tyr Asn Ser Leu Gly Ala Leu Gly Lys Asn Glu Asn
65 70 75 80

Val Ser Glu Ser Thr Arg Phe Gly Ser Gly Arg Lys Pro Ser Gln Glu
85 90 95

Gln Phe Lys Val Leu His Asp Gly Phe Trp Gln Lys Ile Asn Val Lys
100 105 110

Gln Pro Glu His Arg Ile Asn Gly Arg His Gly Gly Asn Ser His Glu
115 120 125

Phe Leu Arg Ser Pro Trp Ile Lys His Tyr Lys Pro Leu Val Lys Thr
130 135 140

Gln Ile Pro Val Thr Asp Glu Pro Glu Asn Gln Val Val Ser Ser Ser
145 150 155 160

Asn Gly Lys Lys Gly Ile Cys Ser Ser Gly Ser Ala Ser Ser Leu Lys
165 170 175

Gln Leu Ser Ser His Ser Arg Asp His Asp Gln Ile Ser Val Gly Glu
180 185 190

Ala Glu Val Ser Asp Gln Asn Phe Val Asn Glu Gly Ile Lys Gly Glu
195 200 205

Asn Gly Ser Ser Lys Lys Met Lys Thr Val Met Met Ser Glu Ser Ser
210 215 220

Ser Thr Asp Gln Val Val Pro Leu Asn Lys Leu Leu Gln His Asp Val
225 230 235 240

Asn Leu Lys Ser Val Ser
245

<210> 37
<211> 633
<212> DNA
<213> Arabidopsis thaliana

<400> 37
atgtactctg cggggaaaga gtatatggaa acagaatgga ctaatgagaa gcatagttta 60

tatcttaaat ctatggaagc ttcattcgta gatcagttat ataactcgct cggagctctc 120

gggaagaacg agaatgtatc cgaatcaacg aggttcggta gcggtagaaa accgtctcaa 180

gaacagttca aggttcttca tgatggtttc tggcagaaga ttaatgtgaa acaacctgaa 240

catcggatta acggaaggca cggtggtaat tctcatgagt ttcttaggag tccatggatt 300

aagcattata aacctttagt aaagacacaa atcccggtaa cggatgagcc cgaaaatcaa 360

gttgttagca gctctaatgg gaagaaggga atatgcagct ctggctcagc ctctagtctc 420

aagcagctaa gctctcattc gcgtgaccac gaccaaatca gcgttggaga agcagaggta 480

tcggatcaga actttgttaa cgaaggaata aaaggcgaaa acggaagctc gaagaagatg 540

aagacggtga tgatgagtga atcgtcgagt accgatcagg ttgttccact caataagctc 600

ttgcaacatg acgtaaattt gaagtctgtt tct 633

<210> 38
<211> 211
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(211)
<223> ceres Seq. ID no. 12323604

<400> 38
Met Tyr Ser Ala Gly Lys Glu Tyr Met Glu Thr Glu Trp Thr Asn Glu
1 5 10 15

Lys His Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe Val Asp Gln
20 25 30

Leu Tyr Asn Ser Leu Gly Ala Leu Gly Lys Asn Glu Asn Val Ser Glu
35 40 45

Ser Thr Arg Phe Gly Ser Gly Arg Lys Pro Ser Gln Glu Gln Phe Lys
50 55 60

Val Leu His Asp Gly Phe Trp Gln Lys Ile Asn Val Lys Gln Pro Glu
65 70 75 80

His Arg Ile Asn Gly Arg His Gly Gly Asn Ser His Glu Phe Leu Arg
85 90 95

Ser Pro Trp Ile Lys His Tyr Lys Pro Leu Val Lys Thr Gln Ile Pro
100 105 110

Val Thr Asp Glu Pro Glu Asn Gln Val Val Ser Ser Ser Asn Gly Lys
115 120 125

Lys Gly Ile Cys Ser Ser Gly Ser Ala Ser Ser Leu Lys Gln Leu Ser
130 135 140

Ser His Ser Arg Asp His Asp Gln Ile Ser Val Gly Glu Ala Glu Val

145 150 155 160

Ser Asp Gln Asn Phe Val Asn Glu Gly Ile Lys Gly Glu Asn Gly Ser
165 170 175

Ser Lys Lys Met Lys Thr Val Met Met Ser Glu Ser Ser Ser Thr Asp
180 185 190

Gln Val Val Pro Leu Asn Lys Leu Leu Gln His Asp Val Asn Leu Lys
195 200 205

Ser Val Ser
210

<210> 39
<211> 960
<212> DNA
<213> Arabidopsis thaliana

<220>
<221> misc_feature
<222> (1)..(960)
<223> ceres Seq. ID no. 13491409

<400> 39
attttgttt ctctctttct ctctgatatt tttcattttc ttcttcttct ctctctctct 60
ccacaaagat aagccaacaa tggttggtga ttacagagga cgctttagta gccgtcgttt 120
ctccgatgac tctgacgatt cttccgacga tgcttcttcc gtggagggag agaccacttc 180
ttccatgtac tctgcgggga aagagtatat ggaaacagaa tggactaatg agaagcatag 240
tttatatctt aaatctatgg aagcttcatt cgtagatcag ttatataact cgctcggagc 300
tctcgggaag aacgagaatg tatccgaatc aacgaggttc ggtagcggta gaaaaccgtc 360
tcaagaacag ttcaaggttc ttcatgatgg tttctggcag aagattaatg tgaaacaacc 420
tgaacatcgg attaacggaa ggcacggtgg taattctcat gagtttctta ggagtccatg 480
gattaagcat tataaacctt tagtaaagac acaaatcccg gtaacggatg agcccgaaaa 540
tcaagttgtt agcagctcta atgggaagaa gggaatatgc agctctggct cagcctctag 600
tctcaagcag ctaagctctc attcgcgtga ccacgaccaa atcagcgttg gagaagcaga 660
ggtatcggat cagaactttg ttaacgaagg aataaaaggc gaaaacggaa gctcgaagaa 720
gatgaagacg gtgatgatga gtgaatcgtc gagtaccgat caggttgttc cactcaataa 780
actcttgcaa catgacgtaa atttgaagtc tgtttcttga gaggtcagat ggtgaagctt 840
tatatgagga gagaattttg taatgtatat atatttgcat aacttataag tcaaatttac 900
tatccttagt tacaagtttc ttcatcatat atcgctaact ataaatatat ttatatgccc 960
960

<210> 40

<211> 816
<212> DNA
<213> Arabidopsis thaliana

<400> 40
```
tttttgtttc tctctttctc tctgatattt ttcattttct tcttcttctc tctctctctc     60

cacaaagata agccaacaat ggttggtgat tacagaggac gctttagtag ccgtcgtttc    120

tccgatgact ctgacgattc ttccgacgat gcttcttccg tggagggaga gaccacttct    180

tccatgtact ctgcggggaa agagtatatg gaaacagaat ggactaatga gaagcatagt    240

ttatatctta aatctatgga agcttcattc gtagatcagt tatataactc gctcggagct    300

ctcgggaaga acgagaatgt atccgaatca acgaggttcg gtagcggtag aaaaccgtct    360

caagaacagt tcaaggttct tcatgatggt ttctggcaga agattaatgt gaaacaacct    420

gaacatcgga ttaacggaag gcacggtggt aattctcatg agtttcttag gagtccatgg    480

attaagcatt ataaaccttt agtaaagaca caaatcccgg taacggatga gcccgaaaat    540

caagttgtta gcagctctaa tgggaagaag ggaatatgca gctctggctc agcctctagt    600

ctcaagcagc taagctctca ttcgcgtgac cacgaccaaa tcagcgttgg agaagcagag    660

gtatcggatc agaactttgt taacgaagga ataaaaggcg aaaacggaag ctcgaagaag    720

atgaagacgg tgatgatgag tgaatcgtcg agtaccgatc aggttgttcc actcaataaa    780

ctcttgcaac atgacgtaaa tttgaagtct gtttct                              816
```

<210> 41
<211> 272
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(272)
<223> ceres Seq. ID no. 13491410

<400> 41
```
Phe Leu Phe Leu Ser Phe Ser Leu Ile Phe Phe Ile Phe Phe Phe Phe
1               5                  10                  15

Ser Leu Ser Leu His Lys Asp Lys Pro Thr Met Val Gly Asp Tyr Arg
            20                  25                  30

Gly Arg Phe Ser Ser Arg Arg Phe Ser Asp Asp Ser Asp Asp Ser Ser
        35                  40                  45

Asp Asp Ala Ser Ser Val Glu Gly Glu Thr Thr Ser Ser Met Tyr Ser
    50                  55                  60

Ala Gly Lys Glu Tyr Met Glu Thr Glu Trp Thr Asn Glu Lys His Ser
65                  70                  75                  80

Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe Val Asp Gln Leu Tyr Asn
```

```
                85                  90                  95

Ser Leu Gly Ala Leu Gly Lys Asn Glu Asn Val Ser Glu Ser Thr Arg
            100                 105                 110

Phe Gly Ser Gly Arg Lys Pro Ser Gln Glu Gln Phe Lys Val Leu His
        115                 120                 125

Asp Gly Phe Trp Gln Lys Ile Asn Val Lys Gln Pro Glu His Arg Ile
    130                 135                 140

Asn Gly Arg His Gly Gly Asn Ser His Glu Phe Leu Arg Ser Pro Trp
145                 150                 155                 160

Ile Lys His Tyr Lys Pro Leu Val Lys Thr Gln Ile Pro Val Thr Asp
                165                 170                 175

Glu Pro Glu Asn Gln Val Val Ser Ser Ser Asn Gly Lys Lys Gly Ile
            180                 185                 190

Cys Ser Ser Gly Ser Ala Ser Ser Leu Lys Gln Leu Ser Ser His Ser
        195                 200                 205

Arg Asp His Asp Gln Ile Ser Val Gly Glu Ala Glu Val Ser Asp Gln
    210                 215                 220

Asn Phe Val Asn Glu Gly Ile Lys Gly Glu Asn Gly Ser Ser Lys Lys
225                 230                 235                 240

Met Lys Thr Val Met Met Ser Glu Ser Ser Ser Thr Asp Gln Val Val
                245                 250                 255

Pro Leu Asn Lys Leu Leu Gln His Asp Val Asn Leu Lys Ser Val Ser
            260                 265                 270
```

<210> 42
<211> 738
<212> DNA
<213> Arabidopsis thaliana

<400> 42

```
atggttggtg attacagagg acgctttagt agccgtcgtt tctccgatga ctctgacgat     60

tcttccgacg atgcttcttc cgtggaggga gagaccactt cttccatgta ctctgcgggg    120

aaagagtata tggaaacaga atggactaat gagaagcata gtttatatct taaatctatg    180

gaagcttcat tcgtagatca gttatataac tcgctcggag ctctcgggaa gaacgagaat    240

gtatccgaat caacgaggtt cggtagcggt agaaaaccgt ctcaagaaca gttcaaggtt    300

cttcatgatg gtttctggca gaagattaat gtgaaacaac ctgaacatcg gattaacgga    360

aggcacggtg gtaattctca tgagtttctt aggagtccat ggattaagca ttataaacct    420

ttagtaaaga cacaaatccc ggtaacggat gagcccgaaa atcaagttgt tagcagctct    480

aatgggaaga agggaatatg cagctctggc tcagcctcta gtctcaagca gctaagctct    540

cattcgcgtg accacgacca aatcagcgtt ggagaagcag aggtatcgga tcagaacttt    600

gttaacgaag gaataaaagg cgaaaacgga agctcgaaga agatgaagac ggtgatgatg    660
```

agtgaatcgt cgagtaccga tcaggttgtt ccactcaata aactcttgca acatgacgta 720

aatttgaagt ctgtttct 738

<210> 43
<211> 246
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(246)
<223> ceres Seq. ID no. 13491411

<400> 43
Met Val Gly Asp Tyr Arg Gly Arg Phe Ser Ser Arg Arg Phe Ser Asp
1 5 10 15

Asp Ser Asp Asp Ser Ser Asp Asp Ala Ser Ser Val Glu Gly Glu Thr
20 25 30

Thr Ser Ser Met Tyr Ser Ala Gly Lys Glu Tyr Met Glu Thr Glu Trp
35 40 45

Thr Asn Glu Lys His Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe
50 55 60

Val Asp Gln Leu Tyr Asn Ser Leu Gly Ala Leu Gly Lys Asn Glu Asn
65 70 75 80

Val Ser Glu Ser Thr Arg Phe Gly Ser Gly Arg Lys Pro Ser Gln Glu
85 90 95

Gln Phe Lys Val Leu His Asp Gly Phe Trp Gln Lys Ile Asn Val Lys
100 105 110

Gln Pro Glu His Arg Ile Asn Gly Arg His Gly Gly Asn Ser His Glu
115 120 125

Phe Leu Arg Ser Pro Trp Ile Lys His Tyr Lys Pro Leu Val Lys Thr
130 135 140

Gln Ile Pro Val Thr Asp Glu Pro Glu Asn Gln Val Val Ser Ser Ser
145 150 155 160

Asn Gly Lys Lys Gly Ile Cys Ser Ser Gly Ser Ala Ser Ser Leu Lys
165 170 175

Gln Leu Ser Ser His Ser Arg Asp His Asp Gln Ile Ser Val Gly Glu
180 185 190

Ala Glu Val Ser Asp Gln Asn Phe Val Asn Glu Gly Ile Lys Gly Glu
195 200 205

Asn Gly Ser Ser Lys Lys Met Lys Thr Val Met Met Ser Glu Ser Ser
210 215 220

Ser Thr Asp Gln Val Val Pro Leu Asn Lys Leu Leu Gln His Asp Val
225 230 235 240

Asn Leu Lys Ser Val Ser
245

<210> 44
<211> 633
<212> DNA
<213> Arabidopsis thaliana

<400> 44
atgtactctg cggggaaaga gtatatggaa acagaatgga ctaatgagaa gcatagttta 60

tatcttaaat ctatggaagc ttcattcgta gatcagttat ataactcgct cggagctctc 120

gggaagaacg agaatgtatc cgaatcaacg aggttcggta gcggtagaaa accgtctcaa 180

gaacagttca aggttcttca tgatggtttc tggcagaaga ttaatgtgaa acaacctgaa 240

catcggatta acggaaggca cggtggtaat tctcatgagt ttcttaggag tccatggatt 300

aagcattata aacctttagt aaagacacaa atcccggtaa cggatgagcc cgaaaatcaa 360

gttgttagca gctctaatgg gaagaaggga atatgcagct ctggctcagc ctctagtctc 420

aagcagctaa gctctcattc gcgtgaccac gaccaaatca gcgttggaga agcagaggta 480

tcggatcaga actttgttaa cgaaggaata aaaggcgaaa acggaagctc gaagaagatg 540

aagacggtga tgatgagtga atcgtcgagt accgatcagg ttgttccact caataaactc 600

ttgcaacatg acgtaaattt gaagtctgtt tct 633

<210> 45
<211> 211
<212> PRT
<213> Arabidopsis thaliana

<220>
<221> peptide
<222> (1)..(211)
<223> ceres Seq. ID no. 13491412

<400> 45
Met Tyr Ser Ala Gly Lys Glu Tyr Met Glu Thr Glu Trp Thr Asn Glu
1 5 10 15

Lys His Ser Leu Tyr Leu Lys Ser Met Glu Ala Ser Phe Val Asp Gln
20 25 30

Leu Tyr Asn Ser Leu Gly Ala Leu Gly Lys Asn Glu Asn Val Ser Glu
35 40 45

Ser Thr Arg Phe Gly Ser Gly Arg Lys Pro Ser Gln Glu Gln Phe Lys
50 55 60

Val Leu His Asp Gly Phe Trp Gln Lys Ile Asn Val Lys Gln Pro Glu
65 70 75 80

His Arg Ile Asn Gly Arg His Gly Gly Asn Ser His Glu Phe Leu Arg
85 90 95

Ser Pro Trp Ile Lys His Tyr Lys Pro Leu Val Lys Thr Gln Ile Pro
100 105 110

Val Thr Asp Glu Pro Glu Asn Gln Val Val Ser Ser Ser Asn Gly Lys
115 120 125

Lys Gly Ile Cys Ser Ser Gly Ser Ala Ser Ser Leu Lys Gln Leu Ser
130 135 140

Ser His Ser Arg Asp His Asp Gln Ile Ser Val Gly Glu Ala Glu Val
145 150 155 160

Ser Asp Gln Asn Phe Val Asn Glu Gly Ile Lys Gly Glu Asn Gly Ser
165 170 175

Ser Lys Lys Met Lys Thr Val Met Met Ser Glu Ser Ser Ser Thr Asp
180 185 190

Gln Val Val Pro Leu Asn Lys Leu Leu Gln His Asp Val Asn Leu Lys
195 200 205

Ser Val Ser
210

<210> 46
<211> 1031
<212> DNA
<213> Artificial Sequence

<220>
<223> clone nucleotide 486033

<220>
<221> misc_feature
<222> (609)..(609)
<223> n is a, c, g, or t

<400> 46
agttcgcttt ggcctccgct tgccccctcc ctctcgcgtc tctatacatc gccgctgttg 60

tgttgcagtt cagtttgcat cctgagctct ctcctggacc agccgagatt tctctctctg 120

cgcatctcta attcatcttc gtcgagagga gctgttcctc ttctttgccg cctcgaatct 180

gggactggtc ggttttctgg atccctgctg cctgtcgggt tctcgagagg tgtaaaatcc 240

aatggagggt gtgtcatcgt tgaaccagcc gttgatcaac gacgaccggc agcccgtgcc 300

cagcagtatc gccaagggtg atcaaatcca aggcctgttg tcgggtgaat ggacaaatga 360

gcggcacagc tcgtacataa gctccatgga ggcatctttc gtggagcaac tccgtagtgg 420

ttccaaggcc atccaggagg gcttgtgcca gagcatgagg attccgaggg atgatgctcg 480

cagccatgac gtccctgaga gtccgtgggt ggtggtgagg cgtttcaggc cacgcggtgt 540

ccaccatggc gatggaatgg aagtggaacc tttggtcgat ggttatggat caggtactga 600

cacggcccng agagaaggtc cggacccacg caagatagcg aaggcttctg ctattattga 660

agtcacggac cagaattttc ctgaggaggg gattcaatcc agtaacggtg catgcaagag 720

acagaaatct actcctggca atgcatcaaa tggccagggt acttaacaag atagtggaag 780

ccaagccatg ccctctctga agccttcagg aggccatggg ggaaacgaga cttgtctgca 840

gtactacgtg atgacaggtc gtgctgcagc tgcaagtagt ttggcttacc aaaatatgat 900

atcgtcgtcc tttctgcggt gtggagagta gaatatgcat atccacatct gcagagagca 960

ccggttctct tcttcttgtt gctgttacta ttttgtgcca tggagcaaat ttatttggta 1020

aatttgagct g 1031

<210> 47
<211> 174
<212> PRT
<213> Artificial Sequence

<220>
<223> clone peptide 486033

<220>
<221> misc_feature
<222> (123)..(123)
<223> Xaa can be any naturally occurring amino acid

<400> 47

Met Glu Gly Val Ser Ser Leu Asn Gln Pro Leu Ile Asn Asp Asp Arg
1 5 10 15

Gln Pro Val Pro Ser Ser Ile Ala Lys Gly Asp Gln Ile Gln Gly Leu
20 25 30

Leu Ser Gly Glu Trp Thr Asn Glu Arg His Ser Ser Tyr Ile Ser Ser
35 40 45

Met Glu Ala Ser Phe Val Glu Gln Leu Arg Ser Gly Ser Lys Ala Ile
50 55 60

Gln Glu Gly Leu Cys Gln Ser Met Arg Ile Pro Arg Asp Asp Ala Arg
65 70 75 80

Ser His Asp Val Pro Glu Ser Pro Trp Val Val Val Arg Arg Phe Arg
85 90 95

Pro Arg Gly Val His His Gly Asp Gly Met Glu Val Glu Pro Leu Val
100 105 110

Asp Gly Tyr Gly Ser Gly Thr Asp Thr Ala Xaa Arg Glu Gly Pro Asp
115 120 125

Pro Arg Lys Ile Ala Lys Ala Ser Ala Ile Ile Glu Val Thr Asp Gln

130 135 140

Asn Phe Pro Glu Glu Gly Ile Gln Ser Ser Asn Gly Ala Cys Lys Arg
145 150 155 160

Gln Lys Ser Thr Pro Gly Asn Ala Ser Asn Gly Gln Gly Thr
165 170

<210> 48
<211> 210
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus sequence derived from various organisms

<220>
<221> misc_feature
<222> (2)..(2)
<223> Xaa is Glu or Lys

<220>
<221> misc_feature
<222> (3)..(3)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (5)..(5)
<223> Xaa is Thr or Pro

<220>
<221> misc_feature
<222> (7)..(8)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (9)..(9)
<223> Xaa is Met or Gly

<220>
<221> misc_feature
<222> (10)..(10)
<223> Xaa is Tyr or Ile

<220>
<221> misc_feature
<222> (11)..(11)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (12)..(12)
<223> Xaa is Ala or Lys

<220>
<221> misc_feature
<222> (14)..(14)
<223> Xaa is Lys or Asn

<220>
<221> misc_feature
<222> (15)..(15)
<223> Xaa is Glu or Arg

<220>
<221> misc_feature
<222> (16)..(16)
<223> Xaa is Tyr or Val

<220>
<221> misc_feature
<222> (17)..(17)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (18)..(18)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (19)..(19)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (20)..(23)
<223> At least 1 but as many as 4 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (26)..(26)
<223> Xaa is Asn or Asp

<220>
<221> misc_feature
<222> (28)..(28)
<223> Xaa is a positively charged residue, specifically, lysine, arginine, or histidine

<220>
<221> misc_feature
<222> (30)..(30)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (31)..(31)
<223> Xaa is Leu or Ser

<220>
<221> misc_feature
<222> (33)..(33)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine,

leucine, or methionine

<220>
<221> misc_feature
<222> (34)..(34)
<223> Xaa is Lys or Ser

<220>
<221> misc_feature
<222> (42)..(42)
<223> Xaa is any negatively charged amino acid, specifically, aspartic acid or glutamic acid

<220>
<221> misc_feature
<222> (45)..(74)
<223> Any one or all of the Xaa amino acids can either be present or absent; Xaa is any amino acid

<220>
<221> misc_feature
<222> (76)..(76)
<223> Xaa is Val or Ala

<220>
<221> misc_feature
<222> (77)..(77)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (78)..(79)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (80)..(80)
<223> Xaa is Gly or Glu

<220>
<221> misc_feature
<222> (81)..(82)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (83)..(83)
<223> Xaa is Gln or Glu

<220>
<221> misc_feature
<222> (84)..(102)
<223> At least 9 but as many as 19 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (103)..(103)
<223> Xaa is His or Cys

<220>
<221> misc_feature

<222> (104)..(104)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (105)..(105)
<223> Xaa is Phe or Val

<220>
<221> misc_feature
<222> (106)..(106)
<223> Xaa is Leu or Pro

<220>
<221> misc_feature
<222> (107)..(107)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (108)..(108)
<223> Xaa is Ser or Asn

<220>
<221> misc_feature
<222> (111)..(112)
<223> Any one or ll of the Xaa amino acids can either be present or absent; Xaa is any amino acid

<220>
<221> misc_feature
<222> (113)..(113)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (114)..(114)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (115)..(115)
<223> Xaa is a positively charged residue, specifically, lysine, arginine, or histidine

<220>
<221> misc_feature
<222> (116)..(116)
<223> Xaa is any aromatic residue, specifically, phenylalanine, tyrosine, or tryptophan

<220>
<221> misc_feature
<222> (117)..(117)
<223> Xaa is a positively charged residue, specifically, lysine, arginine, or histidine

<220>
<221> misc_feature
<222> (119)..(126)
<223> Any one or all of the Xaa amino acids can either be present or absent; Xaa is any amino acid

<220>
<221> misc_feature
<222> (127)..(127)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (129)..(130)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (131)..(131)
<223> Xaa is Glu or Asn

<220>
<221> misc_feature
<222> (132)..(139)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (140)..(140)
<223> Xaa is Gly

<220>
<221> misc_feature
<222> (141)..(146)
<223> Any one or all of the Xaa amino acids can either be present or absent; Xaa is any amino acid

<220>
<221> misc_feature
<222> (148)..(148)
<223> Xaa is Gly or Pro

<220>
<221> misc_feature
<222> (149)..(149)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (150)..(150)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (151)..(151)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (152)..(153)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (154)..(154)

<223> Xaa is a positively charged residue, specifically, lysine, arginine, or histidine

<220>
<221> misc_feature
<222> (155)..(171)
<223> At least 6 but as many as 17 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (172)..(172)
<223> Xaa is Gln or Lys

<220>
<221> misc_feature
<222> (173)..(173)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (174)..(176)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (177)..(177)
<223> Xaa is Glu or Ser

<220>
<221> misc_feature
<222> (178)..(180)
<223> At least 1 but as many as 3 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (183)..(183)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (188)..(189)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (190)..(190)
<223> Xaa is any negatively charged amino acid, specifically, aspartic acid or glutamic acid

<220>
<221> misc_feature
<222> (191)..(191)
<223> Xaa is Gly or Glu

<220>
<221> misc_feature
<222> (192)..(192)
<223> Xaa is Ile or Ala

<220>
<221> misc_feature
<222> (193)..(193)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (194)..(194)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (195)..(195)
<223> Xaa is Glu or Ser

<220>
<221> misc_feature
<222> (196)..(196)
<223> Xaa is Asn or Thr

<220>
<221> misc_feature
<222> (197)..(197)
<223> Xaa is Gly or Glu

<220>
<221> misc_feature
<222> (198)..(198)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (199)..(199)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (201)..(202)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (204)..(204)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (205)..(205)
<223> Xaa is Val or Arg

<220>
<221> misc_feature
<222> (206)..(206)
<223> Xaa is Met or Arg

<220>
<221> misc_feature
<222> (207)..(207)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (209)..(209)
<223> Xaa is Glu or Arg

<220>
<221> misc_feature
<222> (210)..(210)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<400> 48

Val Xaa Xaa Glu Xaa Thr Xaa Xaa Xaa Xaa Xaa Xaa Gly Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp Thr Xaa Glu Xaa His Xaa Xaa Tyr
20 25 30

Xaa Xaa Ser Met Glu Ala Ser Phe Val Xaa Gln Leu Xaa Xaa Xaa Xaa
35 40 45

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys Xaa Xaa Xaa Xaa Xaa
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Pro Trp Xaa Xaa
100 105 110

Xaa Xaa Xaa Xaa Xaa Pro Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Asp
115 120 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
130 135 140

Xaa Xaa Ser Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145 150 155 160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
165 170 175

Xaa Xaa Xaa Xaa Glu Val Xaa Asp Gln Asn Phe Xaa Xaa Xaa Xaa Xaa
180 185 190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Lys Xaa Xaa Lys Xaa Xaa Xaa Xaa Ser
195 200 205

Xaa Xaa
210

<210> 49
<211> 241
<212> PRT
<213> Artificial Sequence

<220>
<223> Consensus sequence derived from various organisms

<220>
<221> misc_feature
<222> (1)..(1)
<223> Xaa is Ser or Glu

<220>
<221> misc_feature
<222> (2)..(2)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or

threonine

<220>
<221> misc_feature
<222> (3)..(10)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (11)..11)
<223> Xaa is Glu or Gly

<220>
<221> misc_feature
<222> (12)..(16)
<223> At least 2 but as many as 5 of the Xaa amino acids can be present;
Xaa is any amino acid

<220>
<221> misc_feature
<222> (17)..(17)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or

threonine

<220>
<221> misc_feature
<222> (18)..(31)
<223> At least 11 but as many as 14 of the Xaa amino acids can be present;
Xaa is any amino acid

<220>
<221> misc_feature
<222> (34)..(34)
<223> Xaa is Asn or Asp

<220>
<221> misc_feature
<222> (36)..(36)
<223> Xaa is a positively charged residue, specifically, lysine, arginine,

or histidine

<220>
<221> misc_feature
<222> (38)..(39)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (41)..(41)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (42)..(42)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (43)..(43)
<223> Xaa is Ser or Tyr

<220>
<221> misc_feature
<222> (44)..(44)
<223> Xaa is an aliphatic residue, specifically, isoleucine, valine, leucine, or methionine

<220>
<221> misc_feature
<222> (46)..(46)
<223> Xaa is a tiny amino acid, specifically, alanine, glycine, serine or threonine

<220>
<221> misc_feature
<222> (50)..(50)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (52)..(52)
<223> Xaa is Lys or Ser

<220>
<221> misc_feature
<222> (53)..(135)
<223> At least 8 but as many as 83 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (136)..(136)
<223> Xaa is Pro or Glu

<220>
<221> misc_feature
<222> (137)..(137)
<223> Xaa is any aromatic residue, specifically, phenylalanine, tyrosine, and tryptophan

<220>

<221> misc_feature
<222> (138)..(141)
<223> At least 2 but as many as 4 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (142)..(142)
<223> Xaa is a positively charged residue, specifically, lysine, arginine, or histidine

<220>
<221> misc_feature
<222> (143)..(231)
<223> At least 9 but as many as 89 of the Xaa amino acids can be present; Xaa is any amino acid

<220>
<221> misc_feature
<222> (233)..(234)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (235)..(235)
<223> Xaa is Asp or Gly

<220>
<221> misc_feature
<222> (239)..(240)
<223> Xaa is any amino acid

<220>
<221> misc_feature
<222> (241)..(241)
<223> Xaa is any negatively charged amino acid, specifically, aspartic acid or glutamic acid

<400> 49

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
1 5 10 15

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Trp
20 25 30

Thr Xaa Glu Xaa His Xaa Xaa Tyr Xaa Xaa Xaa Xaa Glu Xaa Ser Phe
35 40 45

Val Xaa Gln Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
50 55 60

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
65 70 75 80

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa

85 90 95

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
100 105 110

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
115 120 125

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
130 135 140

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
145 150 155 160

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
165 170 175

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
180 185 190

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
195 200 205

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa Xaa
210 215 220

Xaa Xaa Xaa Xaa Xaa Xaa Xaa Glu Xaa Xaa Xaa Gln Asn Phe Xaa Xaa
225 230 235 240

Xaa

<210> 50
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> Oligo primer used in the generation of labeled probes for hybridization from first-strand cDNA

<400> 50
ttttttttt tttttttv 19